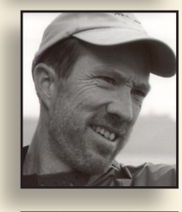
Migration Mystery: Satellite Telemetry Provides Insight into the Life History of Aleutian Terns



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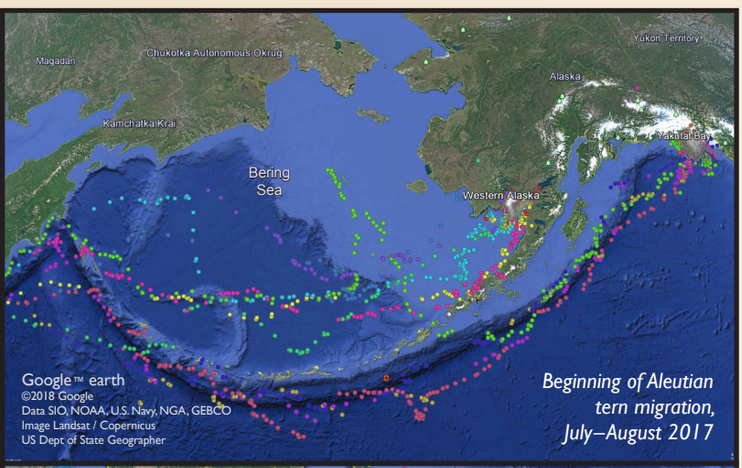
The Aleutian tern (*Onychoprion aleuticus*, ALTE) is a seabird with a small global population and breeding sites restricted to Alaska and the Russian Far East. Aleutian tern population status and trends are difficult to assess due to low breeding site fidelity, breeding habitat plasticity, and frequent colony failure. Additionally, methods for assessing breeding movements, nest monitoring, and colony counts have not been fully developed and implemented in Alaska or elsewhere. Given the unique ecology of the species and the associated data gaps, ALTE is listed as a priority species of conservation concern for many agencies and organizations in Alaska and globally listed as Vulnerable by the IUCN.

In 2017, with support from multiple agencies, we began a collaborative study to look at various aspects of Aleutian tern breeding ecology, including breeding season movements that could potentially document transitions among colonies during the breeding season and identify yet undocumented colonies. Fifteen Solar 2g Argos PTTs from Microwave Telemetry, Inc. were deployed on pre-nesting and nesting Aleutian terns near Dillingham and Yakutat, Alaska during May and June of 2017. High-quality location data were obtained throughout the breeding season from 11 individuals and throughout the migration to Southeast Asia from eight of these individuals. These data were the first high-resolution breeding season and migration movements ever recorded for this species.

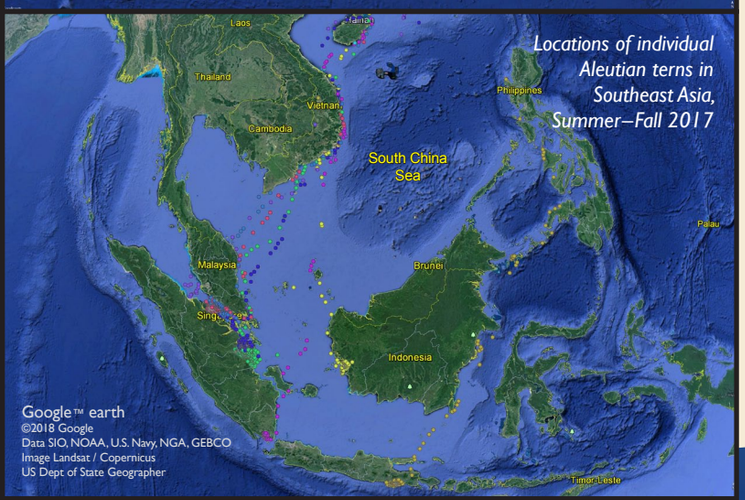
Within the breeding season, we were able to document movements to two previously undocumented colonies, as well as movements to four other known colony locations. Tagged individuals were more strongly associated with colonies that successfully produced fledglings. Local residents at one of the previously undocumented colonies at Clark's Point, Alaska, a small community south of Dillingham, said the Aleutian tern colony is a common, yearly occurrence, except for a few years when a pack of stray dogs were roaming the area. The residents noted that by the time we visited, the "second crop" of Aleutian tern chicks was underway, with successful fledging having occurred earlier in the season as well. We documented the positive likelihood of this occurrence on site with nestling and newly fledged chicks, as well as older juveniles on the wing that were taking part in mobbing potential predators, such as a short-eared owl that patrolled the edges of the colony. Although we documented movements among previously documented as well as undocumented colonies, movements during the breeding season were primarily local-scale, usually less than 100 km from the capture site. Yakutat birds tended to have a bit longer and unidirectional movements that likely included foraging off the continental shelf, while Dillingham tagged birds tended to have shorter foraging movements primarily associated with Nushagak Bay, with some birds foraying into the adjacent Kvichak Bay.

Photo by Tory Rhoads, ADF&G

Aleutian tern outfitted with MTI Solar 2g PTT.



Beginning of Aleutian tern migration, July–August 2017



Locations of individual Aleutian terns in Southeast Asia, Summer–Fall 2017

Overwinter migration started mid- to late July for Yakutat birds, while Aleutian terns tagged in Dillingham started migration beginning mid-August. One bird from Dillingham possibly prospected in the Port Moller area of Alaska, where a known Aleutian tern colony has been recorded. Additionally, several terns flew close to known colony sites on the Kamchatka Peninsula, as well as Sakhalin Island, both on the Russian side of the Bering Sea. Three Aleutian terns spent between 3 and 28 days in the Yellow Sea between China and Korea, before continuing south. Five birds appeared to complete their migration in the Malacca Strait area between Indonesia, Singapore, and Malaysia, one appeared to complete its migration on the south end of Sumatra, one in southeastern Java, and one in southwest Indonesian Borneo.

These movement data are already enhancing our understanding of this poorly known species and generating strong interest from potential partners in Alaska, Russia, and throughout the East Asian-Australasian Flyway. We are very excited to attempt deployment of more PTTs on Aleutian terns in the 2018 breeding season with support from the National Fish and Wildlife Foundation's Pacific Seabird Program, and other agencies and organizations. We could not conduct this research without the support of the communities we visit and we are grateful for their knowledge, enthusiasm, and hospitality.